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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------------|----------------------------------|
| 10/602,963 | 06/24/2003 | Ximin Zhang | MERL-1474 | 1206 |
| 7590 Patent Department Mitsubishi Electric Research Laboratories, Inc. 201 Broadway Cambridge, MA 02139 | 12/28/2006 | | EXAMINER REKSTAD, ERICK J | ART UNIT 2621 PAPER NUMBER |
| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE | | |
| 3 MONTHS | 12/28/2006 | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/602,963 | ZHANG ET AL. | |
| | Examiner | Art Unit | |
| | Erick Rekstad | 2621 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 24 June 2003.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-10 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 1,2,4 and 8-10 is/are allowed.
 6) Claim(s) 3, 5, 6, and 7 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a First Office Action for application no. 10/602,963 filed on June 24, 2003 wherein claims 1-10 are presented for examination.

Double Patenting

Claim 6 is objected to under 37 CFR 1.75 as being a substantial duplicate of Claim 5. The specification teaches the equation for the variance in claim 6 is equivalent to the equation of claim 5 when $F_1(R)=c/R$ (Paragraph [051]). When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 5, 6, and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 states the multiplier value of Claim 1 is defined by an equation containing D and R. Claim 1 requires the multiplier value to be determined directly as a function of only the variance and the number of bits assigned to the current frame. As stated by the specification (Paragraph [0049]), Distortion variable D is not the variance value.

Therefore the applicant is attempting to claim a feature that is not supported by the Independent claim.

Claims 5 and 6 state the multiplier is further based on a variable c. As shown above for Claim 3, the independent claim does not support the multiplier value being determined by anything other than directly as a function of only the variance and the number of bits assigned to the current frame.

Claim 7 states an equation for determining the variable c. The equation requires a value already for c, which has not been provided by the claims or the specification. Further the claim does not define the variable R1.

Allowable Subject Matter

Claims 1, 2, 4, and 8-10 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The claims are indicated as allowable over the prior art of record since the cited reference taken individually or in combination fails to particularly disclose a method for encoding a video including a sequence of frames as described in the claims.

The closest prior art (US Patent 5,333,012 to Singhal et al.) discloses a similar method for encoding video. However, Singhal fails to particularly teach or suggest "determining a multiplier value directly as a function of only the variance and the number of bits assigned to the current frame" along with the requirements of "estimating motion vectors between a reference frame and the current frame; determining a sum of absolute difference (SAD) based on a motion compensated residual between the reference frame and the current frame". Thus, Singhal is further silent on the selecting

Art Unit: 2621

of an encoding mode and encoding the motion compensated residuals as required by the claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick Rekstad whose telephone number is 571-272-7338. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erick Rekstad
Examiner
AU 2621

Erick Rekstad
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PRIMARY EXAMINER

Application/Control Number: 10/602,963

Page 5

Art Unit: 2621

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